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APPENDIX A

MATERIAL SAFETY DATA SHEETS (MSDSs)

Material Safety Data Sheet
May be used to comply with
OSHA's Hazard Communication Standard,
29 CFR 1910.1200. Standard must be
consulted for specific requirements.

U.S. Department of Labor
Occupational Safety and Health Administration
(Non-Mandatory Form)
"Form Approved
OMB No. 1218-0072



IDENTITY (As used on Label and List) Crystal Clear	Note: Blank span	ces are not permitted is available, the space	t. If any item is not a B must be marked to	p picable , or no indicate that.
Section I	•			
Manufacturer's Name	Emergency Telep	hone Number		
AAA Chemicals	215-555-			
Address (Number, Street, City, State, and ZIP Coda)	1	per for Information		
100 A St reet	215-555-	2400		
Anytown, NJ 99999	Oare Preperad 6/12/85			
7 m. y. c. m.	Signature of Pre	parer (optional)		
Section II - Hazardous Ingredients/Identity Information				
Hazardous components (Specific Chemical Identity; COMMON Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optiona
Toluene	200 ppm	100 ppm		30
Methylene Chloride	500 ppm	100 ppm		25
Hexane	mqq 002	50 ppm		19
Propane	1000 ppm	N/A		10
Aromatic Naphtha (Stoddard Solvent)	mqq 003	100 ppm		2.0
Note: Propane functions as an aerosol pro	Dellanc			
	Dellanc			
section III — Physical/Chemical Characteristics Boiling POmt	Specific Gravity (H	I ₂ O – 1)		0.96
section III — Physical/Chemical Characteristics Boiling POmt 120°F		H ₂ O – 1)		0.96 N/A
section III — Physical/Chemical Characteristics Boiling POmt 120° F	Specific Gravity (H	,		
section III — Physical/Chemical Characteristics Boiling POmt 120° F Vapor Pressure (mm Hg.) Vapor Density (AIR - 1)	Specific Gravity (H Melting Point Evaporation Rate	,		N/A
section III — Physical/Chemical Characteristics Boiling POmt 120°F Vapor Pressure (mm Hg.) N/A Vapor Density (AIR - 1) Solubility in Water Insoluble	Specific Gravity (H Melting Point Evaporation Rate	,		N/A
section III — Physical/Chemical Characteristics Boiling POmt 120°F Vapor Pressure (mm Hg.) N/A Vapor Density (AIR - 1) Solubility in Water Insoluble	Specific Gravity (H Melting Point Evaporation Rate	,		N/A
Section III — Physical/Chemical Characteristics Boiling POmt Vapor Pressure (mm Hg.) Vapor Density (AIR - 1) Solubility in Water Insoluble Appearance and Odor Clear liquid with sweer, aromatic odor.	Specific Gravity (H Melting Point Evaporation Rate	,		N/A
Section III — Physical/Chemical Characteristics Boiling POmt Vapor Pressure (mm Hg.) Vapor Density (AIR - 1) Solubility in Water Insoluble Appearance and Odor Clear liquid with sweer, aromatic odor. Section IV — Fire and Explosion Hazard Data Flash Point (Method Wad)	Specific Gravity (H Melting Point Evaporation Pate (Butyl Acetate =	1)	LEL	N/A
Section III — Physical/Chemical Characteristics Soiling POmt Vapor Pressure (mm Hg.) Vapor Density (AIR - 1) Solubility in Water Insoluble Appearance and Odor Clear liquid with sweer, aromatic odor. Section IV — Fire and Explosion Hazard Data Flash Point (Method Wad) < 20°F (For propellant) Extinguishing Media	Specific Gravity (H Melting Point Evaporation Rate (Butyl Acetate =	1)	LEL	N/A > 1
Section III — Physical/Chemical Characteristics Boiling POmt 120°F Vapor Pressure (mm Hg.) Vapor Density (AIR - 1) Solubility in Water Insoluble Appearance and Odor Clear liquid with sweer, aromatic odor. Section IV — Fire and Explosion Hazard Data Flash Point (Method Wad) <20°F (For propellant) Extinguishing Media Carbon Dioxide, Foam, Dry chemical Special Fire Fighting Procedures	Specific Gravity (Homelting Point Evaporation Rate (Butyl Acetate =	1)		N/A > 1
section III — Physical/Chemical Characteristics Boiling POmt Vapor Pressure (mm Hg.) Vapor Density (AIR - 1) Solubility in Water Insoluble Appearance and Odor Clear liquid with sweer, aromatic odor. Section IV — Fire and Explosion Hazard Data Flash Point (Method Wad) < 20°F (For propellant) Extinguishing Media	Specific Gravity (H Melting Point Evaporation Pate (Butyl Acetate = Flammable Limits N/A	1)		N/A > 1
Section III — Physical/Chemical Characteristics Soling POmt 120°F /apor Pressure (mm Hg.) /apor Density (AIR - 1) Solubility in Water Insoluble Appearance and Odor Clear liquid with sweer, aromatic odor. Section IV — Fire and Explosion Hazard Data Flash Point (Method Wad) < 20°F (For propellant) Extinguishing Media Carbon Dioxide, Foam, Dry chemical Special Fire Fighting Procedures The contents are under pressure, when expectations Contents are under pressure, when expectations Contents are under pressure, when expectations The contents are under pressure, when expectations are under pressur	Specific Gravity (Holding Point Evaporation Pate (Butyl Acetate = N/A) Flammable Limits N/A	temperature	they will e	N/A > 1 UEL explode.

section V - R	Reactivity Data				
Stability	ปกรtable		Conditions to Avoid Elevated (120° F) Te	mperature	
	Stable	Х	•	-	
Magnesium,	(Materials to Avoi Strong Oxid	izers	5.	osives an	nd active metal (Aluminum,
Hazardous Decom Phosgene;	nposition or <mark>Byproduc</mark> Hydrogen Chl	ts ori d	Combustion Products: e.	Carbon Mo	onoxide; Carbon Dioxide,
Hazardous Polymerization	May Occur		Conditions to Avoid N/A		
	Will Not Occur	X			
Section VI —	- Health Hazard	Data			
Route(s) of Entry:	: Inha	lation? ES	Skin? YES		Ingestion? NO
Central Ne	Acute and Chronic)	Depr	ressant - Sympt ons inc	lude: di	zziness, disorientation, con-
Symptons o	H ON 19 of this:ef e	er & ct wi	f idney damage will re $f i$ not be seen until $f y$	sult f ir m rears of e	long te rm over-exposure. exposure have existed.
Carcinogenicity:	ŅĪ.	?	IARC M	onographs? NO	OSHA Regulated? NO
	orna of Exposure y appear drur	ık or	confused: headache: r	ausea: sk	cin-dry and irritated.
	ning and irr				
Medical Condition				and etha	anol dependency, respiratory
tract condi			<u>,</u>		
Emergency and I	First Aid Procedures	regh	air if you can withou	t barm to	vourself. Begin CPR if
				with warm	
			ife Handling and Use		OI ye concace
	en in Case Materal I arce of ignit			ent mate	rial, and placein closed con-
taine r. V	entilate are	a an	d place in closed cont	ainer.	
Waste Disposal M Dispose o		ous v	<i>astes in</i> `accordance wit	.h <i>state</i> and	d federal regulations.
<u> </u>					<u> </u>
	e Taken in Handling re above 120"			ause con t	tainers to burst suddenly
and violen			products are highly		•
Other Precautions Vapors tend	to collect	in I	ow areas.		
Section VIII	— Control Mea	ures			
	ction (Specify Type)	- 4 lo ! vo .		a la a	TI VO
Ventilation			apparatus if vapor ormally required when ss than TLVs.	Special	
	Mechanical (Gener	9 /)		Other	N/A
Protective Glove	Will often 1			Protection 1	N/A
Neoprene (or buty l rubk			gogg] es	3
	tive Clothing or Equipm 111y required actices		aerosol usage.		

Material Safety Data Sheet
May be usad to comply with
OSHA's Hazard Communication Standard,
29 CFR 191 O,12QO. Standard must be
consulted for specific requirements.

U.S. Department of Labor
Occupational Safety and Health Administration
(Non-Mandatory Form)
Form Approved
OM8 No. 1218-0072



consulted for specific requirements.		OMB No. 1218	-0072		
IDENTITY (As Used on Label end List) Automatic Transmission Flux	Note: Blank spaces are not permitted, if any item is not applicable, or no information is available, the space must be marked to indicate that,				
Section 1	<u> </u>	•			
Manufacturer's Name		Emergency Teleph	none Number		
Some Chemical Company		318-555			
Address (Number, Street, City, State, and ZII	P Code)	,	er for Information		
P.O.Box 3758		318-555 Date Prepared	-5000		
Anytown, OK 74000		2/26/86			
		Signature of Prep	arer (optional)		
Section II - Hazardous Ingredients	/Identity Information)			
Hazardous Components (Specific Chemical Id	dentity; Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optiona
Refined Oils (Oil mist) 5mg/m ³ 5mg/m ³	10 mg/m ³ (STEL)	87-	-95 %	
Anti - Oxidant	,		3-	-12 %	
Dye and Additives			<1.0	J	
Section - Physical/Chemical Ch	neracteristics				
Boiling Point		Specific Gravity (I	H ₂ O - ¹)		
(327°C)	620°F		•		0.87
Vapor Pressure (mm Hg.)	0.7	Melting Point			NT / A
Vapor Density (AIR = 1)	2.7	Evaporation Rate			N/A
vapor building (Airx = 1)	N/A	(Butyl Acetate -	1)		N/A
Solubility in Water	1		,		
Negligible					
Appearance and Odor	1 . 1				
Red oily liquid, slight oil					
section Iv - Fire and Explosion Ha	zard Data				
Flash Point (Method Used)		Flammable Limits		LEL	ÜEL
202°C (395°F) (Cot)		1		N/A	N/A
Extinguishing Media	ide, dry chemica		-		rect strea
Special Fim Fighting Procedures Do no a positive pressure NIOSH	t enter confined	fire space	without full	Bunker gear	
TO PERSONAL C MADDIA	3. _{12.12} ± 0 + 0 0 0 0 0 0 1 1				r, includir
Unusual Fire and Explosion Hazards					r, includin
Water used to extinguish ma	y cause frothing	ı.			r, includin
Water used to extinguish mag].			r, includin

[Reproduce locally)

Ingestrobn may cause stomach irritation. Mist in massive exposure may cause pneumonitis. Ingestrobn may cause stomach irritation and larrhea. CHRONIC: Repeated contact with may cause drying, cracking, and dermatitis. Carcinogenchy NTP? NO IARC Monographs? OSHA Regulated? NO					ata	eactivity Data	Section V - R
Stable X Heat, open flames, oxidizing materials https://www.near.org.com/products/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/files/f			O Avoid		l	unstable	Stability
Theorems timing Manager to Annoth Strong and disparent to the strong and disparent to the strong and the strong						Stable	
Strong Oxidizer Hardwood becomposition of Byproducts Combination may result in a complex mixture of air borne so liquids and clases. Carbon monoxide and other unidentified organic compounds. Hardwood becomposition of Byproducts Combination to Avoid None Will No Occur Section VI - Health Hazard Data Route; of Enny. Inhance Acts and Overse. Vapors and mists may cause drowsiness, dizziness, headache, and respiratory tract irritation. Mist in massive exposure may cause memonicis. Ingestion may cause stometer irritation. Mist in massive exposure may cause amount is. Ingestion may cause stometer irritation. Mist in massive exposure may cause amountis. Ingestion may cause stometer irritation and larries. CHRONIC: Repeated contact will may cause drying, cracking, and dermatitis. Carcinogenicity NO Signs and Symptoms of Exposure Drowiness, headache, nausea, respiratory tract irritation. gkin irritation. Medical Conditions Generally Aggressed by Exposure Drowiness, headache, nausea, respiratory tract irritation. gkin irritation. Medical Conditions Generally Aggressed by Exposure Personnel with pre-existing skin or respiratory disorders shave of fex Aid Processes Emergency and fex Aid Processes May burn although not readily ignitable. Section VII - Precautions Loca Ensure Mochanical (General) Processes Generally Resistant gloves to minitate Processor Mochanical (General) Processes Generally Resistant gloves to minitate Processor Mochanical (General) Processes Generally Res	ing materials	ıdızıng	open flames, or	Heat,		T (Materials to Aunion	Incompatibilit
Section VI - Health Hazard Data Section VI - Health Hazard Data						izer	Strong oxid
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Section VI - Health Hazard Data Society VI - Health Hazard Data Wish and Convert VI - Wish of VI - Wish and Service exposure may cause inclumination. Wish in massive exposure may cause inclumination. Wish in massive exposure may cause inclumination. Wish in massive exposure may cause included contact will also exposure products. The Mark Mark Mark Mark Mark Mark Mark Mark			:	Non		Mill No. Cons	Polymenzation
Inhabitance Council Control						Will NOT Occur	
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		, 		?			Route(s) of Entry:
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Carcinogencity NTP? NO			Mist in massive tion and larry	<u>itation.</u>	t irrit	tory tract	and respira
NO N	concorte. Repeated Contact with	ia. Otti	rmatitis.	, and de	acking,	ying, crack	ay cause di
NO N							
Signs and Symptoms of Exposure Providess, headache, nausea, respiratory tract irritation. skin irritation. Medical Conditions Service of the provide of the			IARC M				Carcinogenicity
Medical Conditions Serior III products Description of First Aggrevated by Exposure personnel with pre-existing skin or respiratory disorders showed contact with this product. Remove overcome victim to fresh air and provide oxygen if preacting is difficult. Begin artifical respiration if not breathing. Flush eves a skin with water for 15 minutes or more. Do not induce vomiting. Get medical attent section VII - Precautions for Sofa Handling ● nd Use Section VII - Precautions for Sofa Handling ● nd Use Section VII - Precautions for Sofa Handling ● nd Use Section VII - Soak up on absorbent material and dispose of properly. Flush area with no remove trace residues. Remove large spill with vacuum trucks or pump to storage Waste Disposal Method Disposal Method Dispose of in accordance with EPA and state and local rules. Precautions to Be Taken in Handling and Storing the same accordance with EPA and state and local rules. Cher Precautions (Seechy Type) Tot normally needed. Section VIII - Control Measures Respiratory Protection (Seechy Type) Tot normally needed. Not normally needed. Mot normally resistant gloves to minil—Eye Protection Not normally resistant of the proof for prolonged use, NITRILE. Safety goggles.	INO	NO			NO	N.	
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Mechanical (General) Protective Gloves Chemical resistant gloves to mini Eye Protection Safety goggles. mize skin contact. Oil proof for prolonged use, NITRILE.		Special		andad			Ventilation I
Protective Gloves Chemical resistant gloves to mini-Eye Protection Safety goggles. Tize skin contact. Oil proof for prolonged use, NITRILE.	·	Other		ieeaea.			-
mize skin contact. Oil proof for prolonged use, NITRILE.	M Safaty conclas	rotection	was to mini Eve	stant al	•	,	Protective Gloves
	LE.	NITRILE.	prolonged use,	coof for	Oil pro	ontact. Ui	nize skin o
Other Protective Clothing or Equipment Protective clothing as required to minimize skin contact. misting be anticipated, use MIST respirator or organic vapor.	red to minimize skin contact.	required zanic va	ve clothing as	Protect se MIST	ipment !	Clothing or Equipment anticipated	Other Protective
Work/Hygienic Practices, Minimize skin contact. Wash hands with plenty of soap and water	with plenty of soap and water at	ids with	ntact. Wash ha	e skin c	nimize	actices Mini	Work/Hygienic Pr
		re re-us					
leather articles, including shoes, that Page 2 *** *******************************	分以名。Government Printing Office: 1987181-88		tnat Page 2	ig snoes	•	_	

Material Safety Data Sheet

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Standard *must be* consulted for specific requirements.

U.S. Department of Labor

Occupational safety and Health Administration (Non-Mandatory Form)
Form Approved
OMB No. 1218-0072



Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that. IDENTITY (As Used on Label and List) CAUSTIC SODA BEADS Section i Manufacturer's Name Emergency Telephone Number 304-555-1515 Some Importer Inc. Address (Number, Street, City, stem. end ZIP Code) Telephone Number for Information 304-555-1500 12 Edgar Street Date Prepared Somerville, New Jersey 17272 2/12/84 Signature of Preparer (optional) Section II - Hazardous Ingredients/Identity Information Other Limits % (optional) Hazardous Components (Specific Chemical Identity; Common Name(a)) ACGIH nv Recommended **OSHA PEL** Sodium Hydroxide (caustic soda; soda lyr; lyr) 2mg/m3 2 mg/m3 - ceiling 100Z Section III - Physical/Chemical Characteristics Mung Point Specific Gravity (H₂O = 1) 1390°C 2.13 Vapor Pressure (mm Hg.) **Melting Point** 318°C 0 Vapor Density (AIR = 1) **Evaporation** Rate N/A 1 (Butyl Acetate -1) Solubility in Water 50g/100g Appearance and Odor White powder, no odor Section IV — Fire and Explosion Hazard Data Flesh Point (Method Used) N/A None - non combustible Extinguishing Media Flood with water using care not to splatter or splash.
Special Fire Fighting Procedures Wear full protective clothing and self-contained breathing apparatus when fighting fires involving this material. Unusual Fire and Explosion Hazards Not combustible but solid form in cotact with moisture or water may generate sufficient heat to ignite combustible material.

	Reactivity Date				
Stability	Unstable	Conditions to Avoid			
	stable	x None			
	y (Materials to Avoid)	Water, acids,	flammable materi	als, chlorinated hy	drocarbon,
	<u>tin, zinc, ni</u> osition or Byproduct	. tro _compounds ts			
None			····		
Hazardous Polymerization	May Occur	Conditions to Avoid None			
	Will Not Occur	X	•		
Section VI -	- Health Hazard D	ate			
Route(s) of Entr	y: Inhala YE		Skin? YES	Ingestion? YES	
	(Acute and Chronic)		ritation to major ontact can cause	destructive burns.	Destructive on can burn
mouth, th	roat, and stom	nach and may be f	atal. Inhalation	of mist may be cor	rosive to
upper resi	piratory tract				
Carcinogenicity:	NTP?		IARC Monographs?	OSHA Requi	ated?
	NO		NO	NO	
Burning: I upper resp Medical Condition	piratory tract	•		tation to severe b oth	
Chronic sl	kin or eye dis	sorders.			
Emergency and	First Aid Procedures	Wash immediately	with water. For	inhalation, get to	fresh air.
For inges	tion, give lar	rge amounts of wa	ater. Do not induc	ce vomiting.	
Section VII	- Precautions for	r Safe Handling and I	Jee		
•	ken in Case Material Is	•	d orro gontagt	Promptly shovel	nto quitable
<u>-</u>			i eye contact.	PIOMOCIV SHOVEL 1	IIICO SUITADIE
container	. Avoid dust	generation.			
	Method				
Follow lo		d federal regulat	ions. Dilute well	with water and car	refully
Follow loneutralize Precautions to I	cal, state and e with acid. Be Taken in Handling a	and Storing Store a	way from incompat	íble materials note	d above. Sto
Follow loneutralize Precautions to In well-se	cal, state and e with acid. Be Taken in Handling a ealed containe	and Storing Store a ers In a dry locati	way from incompat		d above. Sto
Follow loneutralize Precautions to the well-sewill attace Other Precautions	cal, state and e with acid. Be Taken in Handling a caled contained ck some forms	and Storing Store a ers In a dry locati of plastics, rub	way from incompat on, avoid dust Gen ber and coatings.	ible materials note eration. Sodium	d above. Sto
Follow loneutralize Precautions to in well-sewill attace Other Precaution	cal, state and e with acid. Be Taken in Handling a caled contained ck some forms	and Storing Store a ers In a dry locati of plastics, rub	way from incompat ion, avoid dust Gen	ible materials note eration. Sodium	d above. Sto
Follow loneutralize Precautions to in well-sewill attace Other Precaution When worki	cal, state and e with acid. Be Taken in Handling a caled contained ck some forms ns ng with solut	and Storing Store a ers In a dry location of plastics, rub	way from incompat on, avoid dust Gen ber and coatings.	ible materials note eration. Sodium	d above. Sto
Follow loneutralize Precautions to the will attace Other Precaution When working Section VIII	cal, state and e with acid. Be Taken in Handling a saled contained ck some forms as any with soluted control Messer control Messer control Messer call.	and Storing Store a ers in a dry location of plastics, rub	way from incompation, avoid dust Genber and coatings. protection may be	ible materials note eration. Sodium	d above. Sto
Follow loneutralized Precautions to the Well-sewill attack. Other Precaution When working Section VIII-Respiratory Protection Prote	cal, state and e with acid. Be Taken in Handling a led containe ck some forms as my with solute control Measure ction (Specify Type) ring with High	and Storing Store a ers In a dry location of plastics, rub	way from incompation, avoid dust Genber and coatings. protection may be	ible materials note eration. Sodium	d above. Stor
Follow loneutralized Precautions to the Well-sewill attack. Other Precautions When working Section VIII-Respiratory Protection Prot	cal, state and e with acid. Be Taken in Handling a caled contained ck some forms ns ng with soluted control Measured control Measured control Measured with High Local Exhaust	and Storing Store at ers in a dry location of plastics, rubes to the storing of plastics, rubes at the stori	way from incompation, avoid dust Genber and coatings. protection may be er. Special	ible materials note eration. Sodium	d above. Sto
Follow lo neutralize Precautions to I in well-se will attac Other Precautio When worki Section VIII	cal, state and e with acid. Be Taken in Handling a caled contained ck some forms ns ng with soluted control Measured control Measured control Measured with High Local Exhaust	and Storing Store at ers in a dry location of plastics, rubes to the storing of plastics, rubes at the stori	way from incompation, avoid dust Genber and coatings. protection may be	ible materials note eration. Sodium required.	d above. Sto
Precautions to I in well-se will attached the Precaution When working Section VIII - Respiratory Protective Glove Protective Glove	cal, state and with acid. Be Taken in Handling a led contained ck some forms and with solute control Measure	and Storing Store a ers in a dry location of plastics, rubections, full body Efficiency Filter	way from incompation, avoid dust Genber and coatings. protection may be er. Special Other	ible materials note eration. Sodium required. N/A N/A	d above. Sto
Follow lo neutralize Precautions to I in well-se will attac Other Precautio When worki Section VIII- Respiratory Prote Air purify Ventilation Protective Glove Rubber *(cal, state and with acid. Be Taken in Handling a led contained ck some forms ck some forms ns ng with solut control Measure control Measure control High Local Exhaust Mechanical (General) es See precaution	ers In a dry location of plastics, rub sions, full body Efficiency Filte N/A N/A ns section)	way from incompation, avoid dust Genber and coatings. protection may be er. Special Other Eye Protection Dust and	ible materials note eration. Sodium required.	d above. Sto
Follow lo neutralize Precautions to I in well-se will attac Other Precautio When worki Section VIII- Respiratory Prote Air purify Ventilation Protective Glove Rubber *(cal, state and with acid. Be Taken in Handling a led contained ck some forms ns ng with solut control Measure control Measure with High Local Exhaust Mechanical (General) See precaution Clothing or Equipment pron, rubber *	and Storing Store at the storing of plastics, rub storing full body. Lions, full body. Efficiency Filte N/A N/A N/A Solve section) boots (see precau	way from incompation, avoid dust Genber and coatings. protection may be er. Special Other Eye Protection Dust and ations section)	ible materials note eration. Sodium required. N/A N/A	d above. Sto

MATERIAL SAFETY DATA SHEET

IDENTITY

Methanol/Wood Alcohol

SECTION I

Manufacturer's Name

Emergency Telephone Number

A Chemical Company

215-5 55-6500

Address

Telephone Number for Information

1500 Beacon Street

215-555-1207

Some City, NJ 99999

Date Prepared

11/09/85

SECTION 11 - Hazardous Ingredients / Identity Inf ormat ion

Methanol (Wood alcohol; wood naphtha) 200 ppm 100% 200 ppm

SECTION III - Physical/Chemical Characteristics

Boiling Point: 64.51°C Specific Gravity (H20 = 1)

0.7924

Vapor Pressure:

@ 20°C

97.30 Melting Point -97.8°C

Vapor Density:

1.1

Evaporation Rate

5.9

Volubility in Water: Complete

Appearance and Odor:

Clear, colorless, liquid with an alcohol odor.

SECTION IV - Fire and Explosion Hazard Data:

Flash Point (Method Used) 11°C (52°F) (Closed cup)

Flammable Limits

 ${
m LEL}$ UEL

36%

6.0%

Extinguishing Media:

Dry chemical, foam, carbon dioxide, water fog.

Special Fire Fighting Procedures:

Use water spray tokeep exposed containers. cool. Water spray may be used to disperse liquid and dilute to nonflammable mixture. Do not enter confined fire space without full Bunker gear, including a positive pressure NIOSH-approved self-contained breathing apparatus.

Unusual Fire and Explosion Hazards:

Fire exposed containers will explode. Vapors are heavier than air and may travel a considerable distance to an ignition source and flashback.

Page 2
METHANOL/WOOD ALCOHOL

SECTION V - Reactivity Data:

Stability Unstable Conditions to Avoid: Heat, sparks, open flame, contact

with strong oxidizers.

Stable x

Incompatibility (Materials to Avoid):

Oxidizers, active metals such as Aluminum and Zinc.

Hazardous Decomposition or Byproducts: (Combustion) Carbon Dioxide, Carbon Monoxide, Aldehydes and unidentified organic compounds.

Conditions to Avoid: N/A

Will **Not** Occur: X

SECTION VI - Health Hazard Data:

Routes of Entry: Inhalation? Skin? Ingestion?
YES YES YES

Health Hazards (Acute and Chronic):

ACUTE: Drowiness, drunkenness, headache, eye irritation and visual disturbances leading to blindness, coughing, shortness of breath and respiratory tract irritation. In extreme cases can result in collapse and death. Eye irritation may occur.

CHRONIC: Prolonged and repeated skin contact can result in dermatitis. Will be absorbed

through the intact skin. Prolonged or repeated over-exposure by all routes can result in damage to the central nervous system, liver, kidneys and eyes, blindness and death.

Carcinogenicity: NTP ARC Monographs? OSHA Regulated? NO NO NO

A 1985 publication reported teratogenicity in rats inhaling 20,000 ppm 7 hours/day during gestation with little maternal toxicity (Fund. Appl. Tox. 5:727 1985).

Signs and Symptoms of Exposure:

Irritation to nose, throat, respiratory tract and eyes. Headache, dizziness, nausea; changes in urinary output; edema; loss of appetite; jaundice; fatigue.

Medical Conditions: Impaired liver and kidney functions; eye disease; skin and respiratory disorders.

Emergency and First Aid Procedures: Ingestion: Induce vomiting; Inhalation: If overcome by exposure, move the victim **immediatelyto** fresh air and provide oxygen if breathing difficult. Keep warm and quiet administer **artifical** respiration if not breathing. Get medical attention. For eye and skin contact, flush with water for 15 minutes.

SECTION VII - Precautions for Safe Handling and Use:

Steps to be taken in Case Ma rial is Released or Spilled: Dike the spill, eliminate sources of ignition. For large spills, evacuate hazard area. Soak up spill with absorbent material and place in non-leaking containers. Do not flush into drains. Use only grounded equipment to prevent sparking. Wear appropriate protective clothing and equipment. Suppress vapor cloud with water fog.

Page 3
METHANOL/WOOD ALCOHOL

Waste Disposal Method: May be incinerated or disposed of as a hazardous waste in an approved **land fill.** Refer to **latest** EPA or state regulations regarding proper disposal.

Precautions to Be Taken in Handling and Storing:

Store in tightly closed vented containers away from heat, flame, sparks and oxidizing agents. Ground & Bond when dispensing. Use non-sparking tools. Extinguishpilot lights and other sources of ignition until all vapors are gone.

Other Precautions:

Do not reuse contaminated clothing or shoes until cleaned.

SECTION VIII - Control Measures:

Respiratory Protection (Specify Type) Air-supplied only.

Ventilation: Local Exhaust: Explosion-proof ventilation Special:

should be used to control vapor accumulation. Explosion-proof ventilation.

Mechanical (General): Other: Explosion-proof N/A

Protective Gloves: Eye Protection: Splash proof safety glasses

Impervious, chemical resistant or goggles as appropriate.

Other Protective Clothing or Equipment:

Chemical protective aprons, boots, and face **shield** as necessary when splashing may occur.

Work/Hygienic Practices:

Avoid prolonged or repeated contact with skin.

DO NOT USE AIR PURIFYING RESPIRATOR: METHANOL HAS POOR WARNING PROPERTIES AND CARTRIDGES HAVE VERY SHORT BREAK-THROUGH TIMES.

Material Safety Data Sheet

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U.S. Department of Labor

Occupational Safety and Health Administration (Non-Mandatory Form) Form Approved OMB No. 1218-0072



Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that. IDENTITY (As Used on Labs/SW List) 732 Selant Section I Manufacturer's Name Emergency Telephone Number 517-555-3905 12 Smith Company Address (Number, Street, City, State, and ZIP Code) Telephone Number for Information 517-555<u>-3900</u> 12 Smith Street Date Prepared 2/2/85 Whalen, DE 99999 Signature of Preparer (optional) Section II - Hazardous Ingredients/Identity Information Other Limits Hazardous Components (Specific Chemical Identity; Common Name(s)) OSHA PEL ACGIH TLV % (optional) Recommended Ace t oxysilane 10 ppm* 10 ppm* *Based on TLV for Acetic Acid which is liberated in curing . Section III — Physical/Chemical Characteristics Boiling Point Specific Gravity (H2O = 1) 300°F 1.05 Vapor Pressure (mm Hg.) Mailing Point 5 N/AVapor Density (AIR. 1) **Evaporation** Rate N/A 1 (Butyl Acetate = 1) Solubility m Water 0.1g/100gAppearance and Odor Vinegar odor, colored paste section Iv - Fire and Explosion Hazard Data Flash Point (Method used) UEL Flammable Limits 250°F (open cup) UNK UNK Extinguishing Media Class B Special Fire Fighting Procedures Use self contained breathing apparatus to protect against evolved acetic acid. Unusual Fire and Explosion Hazards

Section V -	Reactivity Dat	e		
Stability	Unstable		Conditions to Avoid Air and moisture causes the	material to polymerize
	Stable	x	Liberating acetic acid.	maccitat co porymerize.
Incompatibilit	⊥ y [Materials to <i>A</i>		Liberating access acta.	
Strong oxid	dizers <i>can</i> ca	ause t	<u>he material react, liberati</u>	ng acetic acid.
Combustion:	mposition or Bypro Carbon Mo	noxid	e 50 ppm; Carbon Dioxide 500	0 ppm.
Hazardous Polymerization	May Occur		Conditions to Avoid N/A	
•	Will Not Occur	Х		
Section VI -	- Health Hazard	d Date		
Route(s) of Entry	: Int	nalation?	Skin? YES	ingestion? NO
Health Hazards	Acute and Chronic)		*	
				ng and burning due to acetic acid
				ose, throat) may occur if the pro-
		<u>a lar</u> [P?	qe area. CHRONIC: None.	12 COLLA Consulations?
Carcinogenicity:	, N	10'	IARC Monographs	OSHA Regulated?
Signs and Symp Skin irrita	toms of Exposure	ng. e	ye irritation.	
		, , ,	,	
Medical Conditio			Bronchitis	
CALLETIN VOCE	vated by Exposure		DIONOMICES	
	E		Promptly llush eyes with wate	r for at least 15 minutes. Wash
with water. if irritati	Rids Procedure on occurs.	ery i	rritation is transient (short	lived). Remove from exposure
Section VII -	- Precautions	for Sa	e Handling and Use	ه المحمد - " المحمد المحمد - المحمد الم
	en in Case Materia			
Soak up on	absorbent m	<u>later 1</u>	∄⊥.	
Waste Disposal	Method			
		<u>waste</u>	in accordance with state and	nd federal relations.
Precautions to 8 Store below	le Taken in Handlir v 90°F. Exc	ng and S i eesive I	odng neat could cause premature	reaction (curing) and liberation
of acetic a			-	
Other Precaution				
N/A				
	- control Me			
Organic Va	ection (Specify Type Dor.	•)		
Ventilation	Local Exhaust Not norma	allv m	equired Speci	N/A
	Machanical (Generally as			·
Protective Glove		ueyuat	Eye Protection	
Rubber or	<u>plastic rec</u>		'	
Other Protective N/A	Clothing or Equipa	ment		
Wark/Hygienic F	Practices			
/ 44			Page 2	● US. Government Printing Office:1987—181-504/8<262
			A - n	

equipment.

Special Fire Fighting Procedures

can be reignited on surface of water).

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Gasoline	Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.						or no that.	
Section I								
Manufacturer's Name		Emergency Telepi	none Numb	er				
Some Oil Company		914-555-34						
Address (Number, Street, City, State, and ZI)	P Code)	Telephone Numb						
100 Industrial Drive		914-555-34	400 X57	0				
Some City, TX 99999		Data Prepared	Novem	ber 20	, 1987			
		signature of P	reparer (option	ne/)				
section II - Hazardous ingredier	nts/identity information	1						
Hazardous Components (Specific Chemical)	dentity; Common Name(s))	OSHA PEL	AÇGIH	nv	_	mended	%	(optiona
Blend of Carbon 6 - Carbon	• • • • • • • • • • • • • • • • • • • •	•		mg/m3				
Alipatic/parafinic hydroca:	rbons							
BENZENE		1 ppm	10	ppm		0.8-2.	. 0	
Organic Lead Compounds		• •		•		varies	5	
Toluene		200 ppm	100	ppm				
Xylene		100 ppm	100	DD m				
Unleaded premium gasoline			300	ppm/500) ppm	hort exposi	term ire li	mít
-		Specific Gravity (ppm/500) ppm	h ort		
Section III - Physical/Chemical C	Characteristics 90-410"F			ppm/500) ppm	h ort	o.72-	
Section III - Physical/Chemical C		Specific Gravity (ppm/500) ppm	h ort		
Section III - Physical/Chemical C Boiling Point Vapor Pressure (mm Hg.)	90-410″F		H ₂ O = 1)	ppm/500) ppm	h ort	0.72-	
Section III - Physical/Chemical C Boiling Point Vapor Pressure (mm Hg.) vapor Density (AIR - 1)	90-410"F 400	m –	H ₂ O = 1)	ppm/500) ppm	hort	0.72- N/A	
Section III - Physical/Chemical C Boiling Point Vapor Pressure (mm Hg.) vapor Density (AIR - 1) Solubility in Water Insoluble	90-410"F 400	m –	H ₂ O = 1)	ppm/500) ppm	hort	0.72- N/A	
Section III - Physical/Chemical C Boiling Point Vapor Pressure (mm Hg.) vapor Density (AIR - 1) Solubility in Water Insoluble Appearance and Odor	90-410"F 400 3-4	m –	H ₂ O = 1)	ppm/500) ppm	hort	0.72- N/A	
Section III - Physical/Chemical C Boiling Point Vapor Pressure (mm Hg.) vapor Density (AIR - 1) Solubility in Water Insoluble Appearance and Odor Pink liquid, aromatic odor Section Iv Fire and Explosion	90-410"F 400 3-4	m –	H ₂ O = 1)	ppm/500) ppm	hort	0.72- N/A	
Section III - Physical/Chernical C Boiling Point Vapor Pressure (mm Hg.) vapor Density (AIR - 1) Solubility in Water Insoluble Appearance and Odor Pink liquid, aromatic odor	90-410"F 400 3-4	m –	H ₂ O = 1)	ppm/500) ppm	'h Ort exposi	0.72- N/A	

Unusual Fire and Explosion Hazards Water may be ineffective on gasoline fires. Extremely flammable. Vapor accumulation could flash and/or explode.

off from entering water supply. Do not enter confined space without appropriate Protective

Evacuate area. Prevent run-

Cool storage drums with water mist.

	Unstable		Conditions to Avoid					
stability	CHRISTING		Prevent vapor a	<u>cc</u> umulat	ion.			
	Stable	Х	Heat, open flam			ong oxid	lizing age	ents.
Incompatibility		void)						
	acids, ba							
Hazardous Decom			de and other un	identifi	ed organi	C COMPO	unds	
Hazardous	May Occur		Conditions to Avoid	- W C 1 1 C T T T	.ca organir		~114D •	
Polymerization	,							
	Will Not Occur	x						
Section Vi -	Hesith Hazar	d Data						
Route(s) of Entry		nhalation?		Skin?		<u> </u>	ngestion?	
	Anuta and Observi	YES	The Township of the con-	YES		1 1-	YES	
	e is massi	, ACUI ve. H	armful or fatal,	if eyes, if swal .	noss and t lowed.	nroat.	May caus	se "drunke
CHRONIC:	Vomitimg,	diarrh	ea, insomnia, he d leukemia may b	adache,	dizzimess,	aneemia	, muscle a	nd merve
more than	U.I% Benze	ne mus	t be labeled wari	ning of	he Benzen	e toxica	tv. role	onged or
repeated s	skin contac	t caus	es dermatitis.					
Carcinogenicity:		ITP? ES (Be	nzene 0.1%)	YES (Ber	raphs? nzene 0.1%)		OSHA Regulated (ES (Benze	
	<u> </u>	\		\	<u></u>	, <u> </u>	/	
Ciana and Commit	ama at Commercia							
Signs and Sympt Irritation			throat, nausea, v	omitina.	diarrhea	, insomn	nia, heada	iche.
	dizziness					,		-
Medical Condition		Nor				7.1		
Generally Address	iiàd dà Smornia	INCT	ve disease; eve.	skin an	d respirat	ory disc	orders; ir	mpaired
Generally Aggrave	<u> </u>		ve disease; eye,	skin an	d respirat	ory disc	orders; ir	mpaired
liver or k	idney func	tion.			_	-		_
liver or k	idney func	tion.	emove overcome v	ictim fr	om the exp	oosure.	Begin art	ificial
liver or k Emergency and f respiratio	idney functions and a second results in the contract of the co	tion.	emove overcome v ttention. If sk	ictim fr in and e	om the exp	posure.	Begin art	ificial water
liver or k Emergency and f respiratio	idney functions and a second results in the contract of the co	tion.	emove overcome v	ictim fr in and e	om the exp	posure.	Begin art	ificial water
liver or k Emergency and f respiratio immediatel	idney functions and for a series of the seri	tion. es R ical a at lea	emove overcome v ttention. If sk	ictim fr in and e	om the exp	posure.	Begin art	ificial water
liver or k Emergency and f respiratio immediatel Section VII - Steps to Be Take	idney functions and for a precautions in Case Material	tion. cal a ical a at lead for Sat	emove overcome v ttention. If sk st 15 minutes. • Handling and Use sed or Spilled Dike	ictim fr in and e Ingestion	om the expeyes are in a do not	posure. nvolved,f induce	Begin art lush with vomiting.	ificial water
liver or k Emergency and f respiratio immediatel Section VII - Steps to Be Take material.	idney functions functions for a control of the cont	tion. ical a at lead for Sale all i Relead	emove overcome v ttention. If sk st 15 minutes. e Handling and Use sed or Spilled Dike gnition sources.	ictim fr in and e Ingestion spill, Remove	rom the expeyes are in a do not sook up sook up so	oosure. nvolved,f induce mail spii	Begin art lush with vomiting. lls with to detach	absorben
liver or k Emergency and f respiratio immediatel Section VII - Steps to Be Take material. Runoff may	idney functions functions and for a continuate firm create fi	tion. ical a at leas for Sat all i re or	emove overcome v ttention. If sk st 15 minutes. Handling and Use sed or Spilled Dike gnition sources. explosion hazard	ictim fr in and e Ingestion spill, Remove	rom the expeyes are in a do not sook up sook up so	oosure. nvolved,f induce mail spii	Begin art lush with vomiting. lls with to detach	absorben
liver or k Emergency and f respiratio immediatel Section VII - Steps to Be Take material. Runoff may	idney functions functions and for a continuate firm create fi	tion. ical a at leas for Sat all i re or	emove overcome v ttention. If sk st 15 minutes. e Handling and Use sed or Spilled Dike gnition sources.	ictim fr in and e Ingestion spill, Remove	rom the expeyes are in a do not sook up sook up so	oosure. nvolved,f induce mail spii	Begin art lush with vomiting. lls with to detach	absorben
liver or k Emergency and f respiratio immediatel Section VII - Steps to Be Take material. Runoff may wind and r	idney functions functions for a second functions for a second function functi	tion. ical a at leas for Sat all i re or	emove overcome v ttention. If sk st 15 minutes. Handling and Use sed or Spilled Dike gnition sources. explosion hazard	ictim fr in and e Ingestion spill, Remove	rom the expeyes are in a do not sook up sook up so	oosure. nvolved,f induce mail spii	Begin art lush with vomiting. lls with to detach	absorbeniched area
liver or k Emergency and f respiratio immediatel Section VII - Steps to Be Take material. Runoff may wind and r	ridney functions in Case Materia Eliminate create finotify local	tion. ical a at lead for Sal all i re or all emen	emove overcome value of the st 15 minutes. The Handling and Use of Spilled Dike of Spilled Di	ictim fr in and e Ingestion spill, Remove	rom the expeyes are in a do not some soak up so leaking con system.	posure. nvolved,f induce nail spii ontainers For ma	Begin art lush with vomiting. Ils with to detact	absorbeniched area
liver or k Emergency and f respiratio immediatel Section VII - Steps to Be Take material. Runoff may wind and r	ridney functions in Case Materia Eliminate create finotify local	tion. ical a at lead for Sal all i re or all emen	emove overcome v ttention. If sk st 15 minutes. Handling and Use sed or Spilled Dike gnition sources. explosion hazard	ictim fr in and e Ingestion spill, Remove	rom the expeyes are in a do not some soak up so leaking con system.	posure. nvolved,f induce nail spii ontainers For ma	Begin art lush with vomiting. Ils with to detact	absorben ched area
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Material Safety Data Sheet
May be used to comply with
OSHA's Hazard Communication Standard. 29 CFR 1910.1200. Standard must be consulted for specific requirements.

U.S. Department of Labor
Occupational Safety and Health Administration **{Non-Mandatory Form)**

Form Approved OMB No. 1218-0072



	Note: Blank space information :	is are not permitted. Is available, me spac	if any item is not ap se must be marked t	oplicable, or no principal indicate that.
	Emergency Teleph	none Number		
	602-253-8	3805		
		5000		
		arer (optional)		
tity Informatic	on .			
r: Common Name	e(s)) OSHA PEL	-•CGIH nv	Other Limits Recommended	% (apton
	n/a	N/A		100
	N/A	N/A		
	2.5 mg/m3	2.5 mg/m3	3	
		de dust)		
	N/A	N/A		
	N/A	0.1 De/m3	R (resp. dust	:)
80 1		_		
eristica N/A	Specific Gravity (H	1 ₂ O = 1)		1.1
N/A	Melting Point			N/A
N/A	Evaporation Rate (Butyl Acetate = 1))		N/A
		-		
	odor			
	Flammable Limits		LEL N/A	UEL N/A
			11/27	74 EP
for surre	nding fire			
tor surrou	nding fire.			
	80 mentice N/A N/A N/A Deta	Telephone Numbe 602-991-6 Date Prepared 5/26187 Signature of Prepared 15/26187 N/A N/A 15/26187 N/A 15/26187 N/A 2.5 mg/m3 (as fluorid N/A N/A N/A 80 mg/m3 (7. S102) 15/26187 N/A N/A N/A 80 mg/m3 (7. S102) 16/26187 N/A N/A N/A Specific Gravity (H N/A N/A Evaporation Rate (Butyl Acetate = 1) 16/26187 16/26187 17/26187 Signature of Prepared 15/26187 N/A N/A 16/26187 Signature of Prepared 15/26187 N/A N/A N/A Specific Gravity (H N/A N/A Evaporation Rate (Butyl Acetate = 1)	Telephone Number for Information 602-991-6000 Date Prepared 5/26187 Signature of Preparer (optional) tity Information g: Common Name(s)) OSHA PEL ACSIH nv N/A N/A N/A N/A 2.5 mg/m3 2.5 mg/m3 (as fluoride dust) N/A N/A N/A N/A N/A 0.1 □ e/m3 80 mg/m3 (7. \$102) 1.5 mg/m3 5 mg/m3 5 mg/m3 N/A N/A N/A Preparer (optional)	Telephone Number for Information 602-991-6000 Date Prepared 5/26187 Signature of Preparer (optional) (Common Name(s)) OSHA PEL 4CGIH nV Recommended N/A N/A N/A N/A N/A N/A 2.5 mg/m3 2.5 mg/m3 (as fluoride dust) N/A N/A N/A N/A N/A 0.1 □ e/m3 (resp. dust) N/A N/A N/A 0.1 □ e/m3 (resp. dust) To mg/m3 (resp. dust) N/A N/A N/A (resp. dust) N/A Specific Gravity (H ₂ O = 1) N/A Evaporation Rate (Butyl Acetate = 1) Pleasant odor Deta Farmable Limits LEL N/A

OSHA 174, Sept. 1985 (Reproduce locally)

A - 14

Unusual Fire and Explosion Hazards Dry powdered material builds static charge when subject to friction.

Use with care around flammable liquids.

Section V -	Resctivity Data	3				
Stability	Unstable		Conditions to Avoid Extreme heat			
	Stable		Extreme near			
Incompatibility	 (Materials to Avoid)	X Am	<u> </u> monia, chlorine-, n	itric acid	. hvdrochloric	acid. strong alka
powerful	oxidizers					
	imposition or Byprod		ine Compounds, Car	bon Monox	ide, Ammonium l	pisulfate
Hazardous Polymenzation	May Occur		Conditions to Avoid		,	
	Will Na Occur	х				
Section VI	- Health Hazard	d Data				
Route(s) of Entry	r. inh	elation? YES	Sk	in? YES	Inç	pestion? YES
Health Hazards	(Acute and Chronic)	140	•	110		11.5
Carcinogenicity	NTI N	P?	LAI	RC Monographs	? 05	SHA Regulated?
	N	0		No		No
Since and Suma	toms of Eugenius					
Trritatio	n of the upp	er re	spiratory tract an	d eyes. Sy	mptoms include	coughing, dypsnea,
sneezing,	throat irri	tatio	n. Skin cotact may	produce	irritation and	drying.
Medical Conditio		т	impaired respiratory	f unat ion		
Generally Aggra	vated by Exposure		impaired respiratory	I dict 1011		
Emergency and	First Aid Procedures		${f 1}$ ush eyes and skin	for at 1	set15 minutes	Inhalation - re-
move to fi	resh air.		tinuted irritation			
attention.						•
Section VII -	- Precautions	ior Sal	e Handling and Use			
Steps to Be Tak	en in Case Material	Is Relea	sed or Spilled			
Sweep up al	nd container	ize.	vacuuming or wet s	weeping u	lay be used to	avoid dust dispersed.
Waste Disposal Dispose in	Method accordance v	with	federal and state	regulatio	nng .	
•						
	Be Taken in Handling					
Store in after hand	cool dry ven	tilat	ed area Protect a	igainst ph	ysical damage T	wash thoroughly
Other Precaution Prevent di	ns ust suspensio	on.				
	-					
Section VIII	-control Mea	011000				
	ection (Specify Type					
NIOSH-app	roved Dust R	espir		<u> </u>		
Ventilation	Local Exhaust exposure h	Prefe i igh	rred, if silica dus	st Speci	n/a	
	Mechanical (Gene See above			Other		
Protective Glove General pr	18			Eye Protection Safety		
Other Protective	Clothing or Equipm			parery C	10AA±c2	
Lab coats Work/Hygienic	s, uniforms o Practices	<u>r_ove</u>	ralls			
Launder s	oiled clothi	ng.				

Material Safety Data Sheet

unusual Fire and Explosion Hazards

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Standard must be consulted for specific requirements

U.S. Department of Labor

Occupational Safety and Health Administration (Non-Mandatory Form)
Form Approved



OMBNo. 1218-0072 IDENTITY (As Used on Label and List) Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that. STEEL ALLOYS Section | Manufacturer's Name Emergency Telephone Number 213-555-1111 A *Steel* Company Address (Number. Street, city, State, and ZIP code) Telephone Number for Information 213-555-5307 189 Eighth Street Date Prepared 12/12/85 Sometown, MI 99999 Signature of Preparer (optional) Section II - Hazardous Ingredients/Identity Information Other Limits **ACGIH** TLV Hazardous Components (Specific Chemical Identity; Common Name(s)) OSHA PEL Recommended % (optional) 5 mg/m3 (As Iron Oxide) 10 mg/m90-100 Iron .01-1.53.5 mg/m3 Carbon 0.5 mg/m3 (salts) 0.5 mg/m3 .01-12Chromium 5 mg/m3 (as dust 5 mg/m3 (ceiling) 05-2.0 Manganese 01-10 1 mg/m3 (ceiling) 1 mg/m3Nickel (dust & $0.15 \, mg/m3$.15- .35 0.05 mg/mLead 0 - 18Tungsten Section III — Physical/Chemical Characteristics Specific Gravity (H₂O = 1) **Boiling Pours** 7.8-8.2 5000°F Vapor Pressure (mm Hg.) **Melting Point** Approx. N/A 2500°F Evaporation Rate Vapor Density (AIR # 1) N/A N/A (Butyl Acetate = 1) Solubility in Water Insoluble Appearance and Odor Gray - Black metal, odorless Section Iv - Fire and Explosion Hazard Data UEL Flammable Limits LEL Flash Point (Method Used) N/A - 'not combustible N/A N/A **Extinguishing Media** N/A Special Fire Fighting Procedures N/A

Section V -	Reactivity Date			
Stability	Unstable		Conditions to Avoid	
	Stable	x	None	
-	 (Materials to Avo th strong aci	id)	to liberate explosive h	nydrogen gas
	mposition or Byprodu			
Hazardous Polymenzation	May Occur		Conditions to Avoid	
	Will Not Occur	×		
Section VI -	Health Hazard	Data		
Route(s) of Entry		lation? ES	Şkin? NO	ingestion? YES
Health Hazards (248 hours.	Acute end Chronic) ACU'	TE: Inhalation of fume	es may result in chill and fever for 12 troat irritation and flu-like symp toms.
CHRONIC: "carnage ki	Chromium man dneys and af	gane: fect	se and nickel fumes may muscle strength.	cause lung disease, lead fumes can
Carcinogenicity:	NTF YES – nick	? el &	chromium YES - nicke	onographs? Requisted? el & chromium – NO
Signs and Sym Dust, weld	ptoms of Exposure ling fumes:	Meta	llic taste: nausea; tig	ahtness of chest, fever, irritation of
	e, throat and			
Medical Conditi	ions	αh		
Generally Aggra	vated by Exposure	CII	ronic lung disease; all	rergic conditions.
	Eine Aid Desertung			
Dust, wel	First Aid Procedures ding fumes:	Remo	ove to fresh air. Eye,	/skin contact: Flush with water.
Section VII -	Precautions f	or Sa	fe Handling and Use	
	en in Case Material		used or Spilled wept up and placed in s	quitable container
chips and	dust siloutu	DE 5	wept up and praced in s	Sullable Colleather.
Waste Disposal	Method			
		us wa	aste: follow applicable	regulations.
	Be Taken in Handling		oring nimize particle accumul	ation
obe good	HOUDENCEPING		minibe partities accumal	
Other Precautio	กร			
<u>Ventilate</u>	welding, bra	zing	, burning and grinding	operations.
	- Control Mea			
	tection (Specify Type) respirator.			
Ventilation	Local Exhaust R		red for welding,	Special N/A
	grinding of Mechanical (General		ions.	Other
Protective Glove	N/A es		Eve	Protection
As needed	based on ope			As needed
<u>Maybe nee</u>	e Clothing or Equipm ded for grind	ent ling,	welding, etc.	
Work/Hygienic N/A	Practices			
				ell cours mmt